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TITLE: Method of plasma etching silicon nitride

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[0003] U.S. Pat. No. 6,153,514 discloses a method of forming a self-aligned dual damascene structure which includes a lower conductive layer (e.g., copper or copper alloy), a first etch stop layer (e.g., silicon nitride), a first dielectric layer (e.g., low k dielectric material wherein k <4), a second etch stop layer (e.g., silicon nitride), a second dielectric layer (e.g., low k dielectric material), a hard mask layer (e.g., silicon nitride), and a photoresist layer patterned to provide the feature to be etched into the second dielectric layer. According to this patent, the nitride hard mask layer is etched with CHF.sub.3/N.sub.2, the second dielectric layer is etched with N.sub.2/H.sub.2O.sub.2 or N.sub.2/H.sub.2, the second etch stop layer is etched with CHF.sub.3/N.sub.2 and the first dielectric layer is etched with C.sub.4F.sub.8/Ar/O.sub.2/CO. U.S. Pat. No. 5,611,888 discloses a method of plasma etching silicon nitride using a mixture of 10-20 sccm Freon 23 (CHF.sub.3) and 70-110 sccm O.sub.2.